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A Review of Cognitive Development in Digital Contexts

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The increase in children's use of various types of digital media in recent years has been staggering, to say the least. A critical question then is what is this extensive use of digital media doing to children's developing minds? Indeed, anyone concerned with children's education, at every level, should be interested in the impact of media use on children's development and academic learning. Needless to say, research on the impact of digital technologies on critical aspects of young children and adolescents' learning and development has not been able to keep up with the revolutionary trends in digital media use. Fran Blumberg and Patricia Brooks' volume (2017), Critical Development in Digital Contexts, makes a timely contribution to the sparse research and literature on this topic.

Written with an academic audience in mind, the edited volume examines the impact of digital media on critical aspects of children's development, including attention, memory, language, and executive functioning. The book is organized into four sections with the first considering young children's learning from digital media. Here the authors consider how young children learn from screens such as tablets and, in doing so, examine related factors that contribute to learning such as parental scaffolding and parent-child interactions around digital media. A chapter considering how language learning occurs in the context of children's use of electronic toys and digital media reflects the breadth of topics addressed in this section.

The range of topics is a key strength of this collection of chapters; and, to this end, the second section does not disappoint. Here the authors consider how a range of different media, from Minecraft to virtual reality, can enhance children's cognitive skills. Anyone broadly concerned with education would find the information in this section compelling, to say the least. The in-depth consideration of how video games can serve as environments for teaching and learning reminds the reader of their powerful potential to shape cognitive abilities. This is also evident in the chapter that considers the relevance of Minecraft for education and learning. Here, the authors draw on recent research findings to explore the uses of Minecraft by educators, and how this media tool can be leveraged to promote learning. Throughout the volume, the authors consider the research opportunities and challenges associated with our efforts to understand the impact of digital media on children and adolescents.

The third section considers children as media consumers and discusses how media literacy can support cognitive development. In these chapters, the authors adopt the perspective that media literacy is an important aspect of children's cognitive development. Children today are increasingly immersed in digital media and media cultures yet, arguably, the education research community is struggling to respond to this rapidly changing field. This is evident in Renee Hobbs' discussion of "measuring digital media literacy" (p. 253) where the reader is reminded of the tension between protectionist and empowering paradigms. Then, in a discussion of how children make sense of the online environment (Haddon & Livingstone), we are reminded of the risks

associated with children's interactions in digital contexts. In this chapter, it is refreshing to hear the voices of children concerning their experiences as they struggle to navigate the risks and challenges of the online environment.

The final section addresses policy and practical recommendations for children's use of media. Here we are reminded of the scope and complexity of the use of digital media in young children's lives. Mobile media are practically ubiquitous in today's society. The challenge, therefore, is to respond to this rapid proliferation in the use of digital media in ways that can harness its potential and circumvent the potential negative effects. Valla and Jordan's chapter on "Children's learning in a mobile media environment" (p. 305) presented a balanced discussion of the challenges and possibilities, yet adopted a positive stance. Then, in the closing chapter there is an acknowledgement of the anxieties of modern parenting in a discussion of the ways parents can mediate children's media consumption.

The chapters in this insightful volume address the impact of digital media from a variety of theoretical and practical perspectives. In doing so, the authors draw on the most recent research and consider a variety of media types, including video games, mobile media, texting, and virtual reality. While no one would question the proposition that there are cognitive consequences of children and adolescents' immersion in digital media, understanding the mechanisms and complexities of children's interactions with media screens is more of a challenge. It is somewhat surprising, therefore, that it has taken this long for researchers to consider the impact of media use on cognitive aspects such as attention, memory, language, and executive functioning. The chapters in this book serve as a reminder that the effects of digital media are multifactorial, and as such are related to the type and extent of use, as well as children's individual characteristics. Clearly, this presents an enormous challenge to educators and researchers. Hopefully, however, this volume will encourage more researchers to delve into this important topic.

In conclusion, this volume will no doubt make a significant contribution to the discourse on the impacts of digital media on children's cognitive development. The authors adopt up-to-date theoretical and practical perspectives of children's learning from various digital media. This text, will no doubt help shape the perspectives of the education and research communities in ways that will advance our understanding of the complexities of media literacy and the new digital media cultures. Reading this text serves as a reminder that researchers in various disciplines from education to psychology and sociology have only just begun to scratch the surface of this fascinating field. What sets this book apart from others is its focus on cognitive development and the positive stance taken by the authors. As such this book should be a welcome addition to the bookshelves of graduate students and researchers from several academic disciplines, and the psychology fields in particular.